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SHOOK, HARDY & BACON L.L.P.
(c/o MICROSOFT CORPORATION)
INTELLECTUAL PROPERTY DEPARTMENT
2555 GRAND BOULEVARD
KANSAS CITY, MO 64108-2613

EXAMINER

FLEISCHER, MARK A

ART UNIT

PAPER NUMBER

3624

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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|------------------------------|--------------------------------------|-----------------------------------|--|
| Office Action Summary | Application No. 10/750,436 | Applicant(s) DEB ET AL. | |
| | Examiner MARK A. FLEISCHER | Art Unit 3624 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 July 2009 and 09 April 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 and 19-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 and 19-34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Status of Claims

1. This non-final office action is in reply to the Amendments and Request for Continued Examination filed on 24 July 2009.
2. Claims 1, 14, 15, 22, 28, 31, 32 and 34 have been amended.
3. Claim 18 has previously been canceled.
4. Claims 1–17 and 19–34 are currently pending and have been examined.

Continued Examination Under 37 CFR 1.114

5. A request for continued examination under 37 CFR §1.114, including the fee set forth in 37 CFR §1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR §1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR §1.114. Examiner further notes that the instant application was revived following an abandonment by way of a Petition approved 14 September 2009. Consequently, Applicant's submission filed 24 July 2009 has been entered.

Response to Amendments

6. The objection to claim 34 is withdrawn in light of Applicant's amendments.
7. The rejection of claim 14 under 35 USC §112, 2nd paragraph is maintained for the reasons set forth below.
8. The rejection of claim 34 under 35 USC §112, 2nd paragraph is maintained for the reasons set forth below.

Response to Arguments

9. Applicant's arguments received on 9 April 2009 have been fully considered but they are not persuasive. Referring to the previous Office action, Examiner has cited relevant portions of the references as a means to illustrate the systems as taught by the prior art. As a means of providing further clarification as to what is taught by the references used in the first Office action, Examiner has expanded the teachings for comprehensibility while maintaining the same grounds of rejection of the claims, except as noted above in the section labeled "Status of Claims." This information is intended to assist in illuminating the teachings of the references while providing evidence that establishes further support for the rejections of the claims.
10. Applicant argues that the prior art of record, specifically Hanagan, does not teach "... or even mention that the customer billing system processes accounts with a set of dependent tasks. Hanagan fails to teach any solution to updating the system if there are any dependencies among the customer accounts." (Remarks, p.10). Examiner respectfully disagrees. Hanagan [0082], [0311] clearly mentions the aforementioned limitations: "The result is a workflow, identifying the proper order in which tasks must be completed, the estimated time required to perform a task, and the type of resource(s) required for each task." (emphasis added), and in [0329] describes "Task dependencies, service request dependencies, and resource availability are all taken into account during the scheduling process." (emphasis added).
11. Applicant also argues that the prior art, specifically Pather "does not disclose processing subscription accounts **periodically**. Additionally, Pather fails to make up for the deficiencies of Hanagan with respect to processing errored accounts a predetermined amount of times or by manual intervention." (Remarks, p.11). Examiner, in the previous Office action indicated these teachings were present in Hanagan. Regarding the periodic processing aspects, Hanagan [0415] clearly teaches this, to wit: "Batch units of workload are initiated periodically, usually according to a pre-defined time schedule or by predictable arrival of an occasional event or file of events from an external system." (emphasis added). Moreover, Pather [11,43] refers to periodic processing of sorts, to wit: "The event provider that is providing these events is programmed to close the

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current event batch periodically, which submits this batch of events for use in notification generation.” (emphasis added). Finally, Pather [42,1] teaches “The <FailuresBeforeAbort> element might be used to define the number of retry attempts that are permissible before aborting any further attempts.” (emphasis added) where the emphasized text corresponds to processing errored accounts a predetermined amount of times. Finally, Pather [48,5] refers to manual tasks: “Furthermore, if any subscription chronicle tables are being used to store subscription data, developers may want to define one or more rules that operate upon them as well. These queries can add, change, and delete subscription data in the chronicle tables, so that it is in the correct state for use by the application.” (emphasis added) where the emphasized text corresponds to the manual correction of errored accounts.

12. In summary, the teachings of the prior art together teach every limitation of the rejected claims and/or demonstrate that the claimed invention is an obvious variation of what has been taught in the art.

Claim Rejections - 35 USC § 112

13. The following is a quotation of the second paragraph of 35 U.S.C. §112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

14. Claims 14 and 34 are rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- **Claim 14:** Examiner acknowledges that the previous issues pertaining to the have been largely addressed. Applicant however recites that “...to keep system resources under a ... threshold” is problematic in that it reads as if components (resources) must be under some threshold or number. Examiner believes, and for purposes of examination, Examiner interprets this as meaning that the *utilization* of system resources is kept under a predetermined threshold. Examiner requests either confirmation of this interpretation or

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further clarification and/or amendment. Also, the phrase 'the number of dependencies' lacks sufficient antecedent basis.

- **Claim 34:** Examiner acknowledges that the previous issues pertaining to the have been largely addressed. Applicant recites "wherein the bulk component processes the errored account with a predetermined threshold number of attempts to resolve the errored account until the account state is in par with the rest of accounts being processed by bulk mode." where it unclear and inconsistent that processing occurs "a predetermined threshold number of attempts to resolve..." and at the same time processing "until the account state is in par with the rest of accounts..." The inconsistency renders this claim vague and indefinite.
- In addition, stating that processing continues until the account state "is in par" uses a relative if not vague term, hence is vague and indefinite based on the use of that phrase.
- Finally, the claim recites "...is in par with the rest of accounts being processed" where the term "rest of accounts" lacks sufficient antecedent basis. Moreover, it is unclear as to whether this refers to 'eligible accounts' or 'errored account', hence is vague and indefinite.

Claim Rejections - 35 USC § 103

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

16. Claims 1–17 and 19–33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hanagan, *et al.* (US PgPub 20040133487 A1) in view of Pather, *et al.* (US 7177859 B2).

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Claims 1, 6, 7, 15, 22, 28 and 31:

Hanagan describes and/or discloses *a system* (see title) and *method* (see e.g., [0004] “billing”, “aggregates”, and in [0082] “determine the tasks...”) and *computer-readable media with computer-executable instructions* (claim 3 and [0452] “server programs”) *that facilitates task processing* ([0082]) and *periodic processing* ([0306] “on a periodic basis”) of *subscription accounts* ([0102] “customer subscription information”) in the following limitations, as shown:

- *a bulk component* ([0357] “batch environment”) *that concurrently processes* ([0357] “automatically processed in parallel”) *a plurality of eligible accounts* ([0411] “row is valid” and in [0078] “providing advanced features to additionally support scripting and validations.” (emphasis added)) *with a set of dependent tasks periodically* (Hanagan [0329] “Task dependencies”. Hanagan [0415] states “Batch units of workload are initiated periodically, usually according to a pre-defined time schedule or by predictable arrival of an occasional event or file of events from an external system.” (emphasis added).); *and*
- *a removal component* (Abstract: “The components are modular.” and in [0252] “Filters can be set up to filter out records. [...] Filters are defined using the ERP graphical user interface.” (emphasis added) where ‘filter out’ corresponds to *removal* and ‘ERP...’ corresponds to *component*”) *that removes an account from the eligible accounts as an errored account if an error is associated therewith* ([0250] “Single erroneous UE records are errored out and written to an Invalid Event Records File. If some records are rejected due to invalid field contents, the reason is written to an Error File.” (emphasis added) where ‘records’ corresponds to *eligible accounts* and ‘errored out’ corresponds to an *errored account*.).
- *an error component* ([0149-56] “...in the case an error is detected.” See also [0250] “The Validator”) *that that processes the errored account* ([0250] “Single erroneous UE records are errored out and written to an Invalid Event Records File.”) *to resolve the error associated therewith* (see [0250] and [0443] “Error Handling”), *and merges the resolved errored account with bulk processing* ([0250] “A GUI is also provided for error correction. [...] The validated UE records are written to files (different files (same format) for assembly and non-assembly records).”

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(emphasis added) where 'validated' corresponds to *resolved errored account* and 'assembly' corresponds to *merges...* see also [0477] "The framework merges master and incremental update files..." of the eligible accounts by the bulk component when the resolved errored account is temporally aligned with the bulk processing ([0476] "Over time the master file will get out of synchronization with the database because of database inserts, updates or deletions that are applied to the database table. For large tables supporting time critical functionality, these additional changes are captured periodically and made available to running processes in an incremental update file." (emphasis added) where 'out of synchronization' in conjunction with 'changes...' and 'incremental update...' corresponds to *temporally aligned* and 'running processes' corresponds to *the bulk component* and *bulk processing*); and

- *facilitates real-time processing of an account* ([0084] "The invention is a Customer Care and Billing (CCB) solution, providing convergent and modular functionality, real-time information, drastically shortened time to market, and a flexible architecture.").

Hanagan does not specifically teach the notion of a *catch-up component*, *per se*, but Pather in an analogous art pertaining to programming models for subscription services, does. In at least col. 28, lines 59-62 ([28,59-62]) "Additionally, developers may specify the number of quan-tums that the logical generator clock can fall behind the real time clock before processing of subscription rules (both event and scheduled) is skipped in order to catch up."

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the modular system models, components and methods of Hanagan that batch process subscription and billing accounts with the methods of Pather that provide a mechanism for 'catching up' because account processing data handled in batches is highly scalable and thus merging corrected data, as by the *error component*, is important so that all accounts can be handled, but the error correction processing may cause many accounts to "fall behind" (Pather [28,51]) the appropriate processing time frame, hence, the capability to *catch up* avoids this problem by maintaining the timeliness of the data processing.

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Claims 2 and 16:

Hanagan teaches the following limitation:

- *the tasks are processed sequentially* (see [0157] and [0259] “The sequence of calculations...”) *against the plurality of eligible accounts* ([0180] “Maintain Customer Accounts”) *according to task dependencies* ([0329]).

Claims 3 and 17:

Hanagan teaches the following limitation:

- *the bulk component repeatedly processes the errored account a predetermined number of attempts before the errored account is removed by the removal component for error processing* ([0247] “A raw event record file is rejected if it contains too many erroneous records (where “too many” is specified in a user-defined parameter)...” and in [0283] “the cycle can be approved for distribution or rejected to be reprocessed.” (emphasis added) and finally, in [0250] see “error correction” and [0476] for “deletions” and *removal component*)).

Claims 4 and 23:

Hanagan teaches the following limitation:

- *merging the errored account* ([0250] “Single erroneous UE records are errored out and written to an Invalid Event Records File.”) *that has been resolved with the one or more eligible accounts for further processing in bulk* ([0250] “A GUI is also provided for error correction. [...] The validated UE records are written to files (different files (same format) for assembly and non-assembly records).” (emphasis added) where ‘validated’ corresponds to *errored account that has been resolved* and ‘assembly’ corresponds to *merging*... see also [0477] “The framework merges master and incremental update files...”).

Claim 5:

Hanagan teaches the following limitation:

- *the errored account is merged back in only when the errored account has been resolved* (see the rejections of claims 4 and 23 above. Note the phrase therein *that has been resolved*... is logically equivalent to the condition/limitation *only when the...*) *temporally with processing of the bulk*

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component ([0476] “Over time the master file will get out of synchronization with the database because of database inserts, updates or deletions that are applied to the database table. For large tables supporting time critical functionality, these additional changes are captured periodically and made available to running processes in an incremental update file.” (emphasis added) where ‘out of synchronization’ in conjunction with ‘changes...’ and ‘incremental update...’ corresponds to *resolved temporally* and ‘running processes’ corresponds to *the bulk component*).

Claim 8:

Hanagan teaches the following limitation:

- *the dependent tasks processed on a first day must be processed error-free before the same tasks can be processed on a succeeding day* ([0082]: “The result is a workflow, identifying the proper order in which tasks must be completed, the estimated time required to perform a task, and the type of resource(s) required for each task. OP 22 actively monitors each task, generating alarms for potential error conditions, such as tasks failing to start or finish at their scheduled time. OP 22 completely automates order scheduling and processing. This eliminates time-consuming errors due to missed steps and improper work implementations, freeing valuable resources to perform other value.” (emphasis added)).

Claim 9:

Hanagan does not specifically teach the following limitation, but Pather, in an analogous art pertaining to programming models for subscription services, does as shown.

- *comprising a catch-up component for real-time processing of an account* (In at least col. 28, lines 59-62 ([28,59-62]) “Additionally, developers may specify the number of quan-tums that the logical generator clock can fall behind the real time clock before processing of subscription rules (both event and scheduled) is skipped in order to catch up.”)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the modular system models, components and methods of Hanagan that batch process subscription and billing accounts with the methods of Pather that provide a mechanism for ‘catching up’ because account processing data handled in batches is highly scalable and thus

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merging corrected data, as by the *error component*, is important so that all accounts can be handled, but the error correction processing may cause many accounts to “fall behind” (Pather [28,51]) the appropriate processing time frame, hence, the capability to *catch up* avoids this problem by maintaining the timeliness of the data processing.

Claims 10 and 19:

Hanagan teaches the following limitation:

- *the bulk component* ([0357] “batch environment”) *is associated with periodic processing* ([0306] “on a periodic basis”) *of the plurality of eligible* ([0411] “row is valid” and in [0078] “providing advanced features to additionally support scripting and validations.” (emphasis added)) *(subscriber) accounts* ([0102] “customer subscription information”).

Claim 11:

Hanagan teaches the following limitation:

- *the plurality of eligible accounts are processed in parallel by one or more computing devices* ([0268] “ERP [] is designed for parallel processing and the workload is balanced between the different processes by workload servers.”).

Claim 12:

Hanagan teaches the following limitation:

- *the plurality of eligible accounts are processed in parallel by different threads of execution on a single computing device* ([0396] “On-line application servers are multi-threaded.”).

Claim 13:

Hanagan teaches the following limitation:

- *the plurality of eligible accounts are processed in accordance with an access control list* ([0456] regarding data security and “login screens”. Also, in [0432] “restrict unauthorized access”).

Hanagan does not specifically refer to an *access control list per se*, but Examiner takes Official Notice that it is old and well-known as well as common place in the information processing arts to restrict access to computer services and information using various standard mechanisms, among these is the use of access control lists of authorized users. Therefore, it would have been obvious to one of

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ordinary skill in the art at the time the invention was made to incorporate an access control list and process accounts *in accordance* therewith because preserving data security and integrity is a necessary condition for ensuring the utility and the functionality of any large-scale information processing system and the utility of such restrictions were predictable at the time of the invention.

Claim 14:

Hanagan does not specifically teach the following limitation, but Pather, as shown, does:

- *wherein the system is restrained to keep system resources* ([23, 23]: “Such a factor can be considered a trade-off between improving application speed and monopolizing system resources.” and corresponds to the effect of self-throttling. In addition, Pather repeatedly refers to “a predetermined threshold” (see e.g., [77,23]) *under a predetermined threshold* ([24,1]: “A value specified for distributor settings should also be considered in terms of a trade-off between improving application speed and monopolizing system resources.” (emphasis added) where ‘a value specified’ corresponds to *a predetermined threshold*.) *if the number of dependencies associated with an account are below a second threshold, the predetermined threshold defining a limit on the use of system resources* (Pather [17,64] states “Second, an application does not have unlimited time and resources.”, and in Pather [24,1] refers to a threshold that provides a limit on use of system resources: “A value specified for distributor settings should also be considered in terms of a trade-off between improving application speed and monopolizing system resources.”, and in Pather [23,55]: “ By lowering the thread pool size, generator processing speed will decrease, but the generator's demand for system resources will also decrease.” (emphasis added) where the emphasized text indicates a threshold that provides a limit to the ‘demand for system resources’.).

Neither Hanagan nor Pather specifically teach that the number of task dependencies corresponds to a predetermined threshold, but Examiner takes **Official Notice** that it is old and well-known as well as common place account processing arts that the number of task dependencies can serve as a threshold or limiting value on the utilization of system resources. Hanagan [0329] indicates such relationships to wit: “Advanced Scheduling Algorithms—[] supports all types of standard scheduling algorithms. Task

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dependencies, service request dependencies, and resource availability are all taken into account during the scheduling process.” (emphasis added) and in Hanagan [0082]: “The work request is analyzed to determine the tasks required to complete the request, as well as all scheduling dependencies that are required. The result is a workflow, identifying the proper order in which tasks must be completed, the estimated time required to perform a task, and the type of resource(s) required for each task. [...] actively monitors each task, generating alarms for potential error conditions, such as tasks failing to start or finish at their scheduled time. [...] completely automates order scheduling and processing. This eliminates time-consuming errors due to missed steps and improper work implementations, freeing valuable resources to perform other value added functions.” (emphasis added). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention to combine the teachings of Hanagan and Pather and what is old and well-known to use the aforementioned threshold and to self-throttle because it provides a mechanism whereby system administrators can effect a tradeoff between speed and system resources as noted above and that the benefits of this capability were known at the time of the invention and were predictable.

Claim 20:

Hanagan teaches the following limitation:

- *the bulk component fetches only the required number of accounts for processing based on the set of tasks to be processed* ([0415]: “The parts of the invention that operate without direct user interaction are called “batch” and “stream I/O”. Batch units of workload are initiated periodically, usually according to a pre-defined time schedule or by predictable arrival of an occasional event or file of events from an external system.” (emphasis added) and in [0416]: “Each batch process inherits from the HvApplication infrastructure class, which provides a context for handling event-based processing. [...] This is accomplished by coding a method Process Message that provides application-specific handling of asynchronous input queue messages.” (emphasis added) where the emphasized text indicates an association between various batch (*bulk*) processes and a particular *set of tasks*.)

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Claim 21:

Hanagan teaches the following limitation:

- *the bulk component and the error component process accounts concurrently* ([0443]: “Error Handling: Error handling allows applications to deal consistently with error or fault situations. Error handling for batch applications is different in some respects than for on-line applications since high-volume errors must not stop processing as long as work can continue. On-line errors generally must be dealt with immediately.” (emphasis added)).

Claim 24:

Hanagan teaches the following limitation:

- *the processing in bulk further comprises,*
 - *processing task dependency data related to the set of tasks* ([0329]: “Task dependencies, service request dependencies, and resource availability are all taken into account during the scheduling process.”);
 - *maintaining system state data of the system* (see [0316] regarding “State Transition Knowledge Base”);
 - *generating an account level exception list of exceptions generated during the processing in bulk* (In at least [0162] reference is made to “processing” and “exception logic”. Further, in [0247] “...the Error Report File...” which is equivalent to *an account level exception list*. Also, in [0443] “Error handling for batch applications...” where this also pertains to *account[s]* as shown in [0081] “The Customer Bill Manager...the mass batch of documents.”);
 - *monitoring and reporting system processes related to at least bulk processing* ([0330]: “The invention monitors tasks for these conditions and creates alarms that are directed to workers to inform them of the problems.” (emphasis added)),
 - *removing an errored account* ([0252] “Filters can be set up to filter out records. [...]” and in [0250] “Single erroneous UE records are errored out [...]”); *and*
 - *providing error handling related to an error generated by the errored account* ([0443]).

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Claim 25:

Hanagan teaches the following limitation:

- *reprocessing the errored account in bulk before removing the account for error processing* (see the rejections of claims 3 and 17).

Claim 26:

Hanagan does not specifically teach the limitation *reprocessing the errored account before requiring manual intervention to initiate further reprocessing*, but Examiner takes Official Notice that it is old and well-known as well as common place in the workflow processing arts to initiate repeated attempts to process a specific task before requiring *manual intervention* as this increases the likelihood of enabling “customer service representatives [to] spend more time focusing on the customer and less time on manual and redundant tasks.” Hanagan [0078]. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the steps of reprocessing attempt to mitigate the necessity of manual intervention because this can tend to increase system productivity (see e.g., [0328]).

Claim 27:

Hanagan teaches the following limitation:

- *predicting when subscription cycle end processing needs to be performed next* (See the rejection of claim 18 above and [0307]. Also, in [0082]: “OP 22 completely automates order scheduling and processing.” and in [0415]: “Batch units of workload are initiated periodically, usually according to a pre-defined time schedule or by predictable arrival of an occasional event or file of events from an external system.” (emphasis added) where ‘workload...’ corresponds to *subscription cycle end process* as in the rejection of claim 18, ‘pre-defined...’ and ‘predictable...’ and ‘...event’ corresponds to the limitation since scheduling an event or task is equivalent to *predicting when...*).

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Claim 29:

Hanagan teaches the following limitation:

- determining according to a predetermined threshold level when a second account that is dependent on a first account is considered inconsistent* (Regarding the first and second account (*dependent on...*) in in [0133] “These types of customers are generally large with multiple invoices, accounts, and locations.” (emphasis added) hence related or dependent accounts. In [0250-3]: “The Validator [] validates the [] records for correctness and [...] performs different types of edits on the fields of the internal record format (for example, numeric checks, date validations, and value checks). Moreover, the Validator determines which records need to be assembled for long duration. An event record file is rejected if it contains too many erroneous records (as specified in a parameter). [...] Several error groups can be defined. [...] The importance of the error group determines how to handle the record (for example, ignore the incorrectness, recycle the record, or write it to the Invalid Event Records File). The error severity can be configured. [...] Corrections can be applied either to individual records, or to multiple records grouped by error codes and error groups. [...] A warning is issued when configurable specified thresholds are passed.”)

Claim 32:

Hanagan teaches the following limitation:

- a first system that processes a set of tasks against a plurality of accounts;*
- a second system that processes the same set of tasks against the plurality of accounts periodically* (Hanagan [0415] states “Batch units of workload are initiated periodically, usually according to a pre-defined time schedule or by predictable arrival of an occasional event or file of events from an external system.” (emphasis added).) *wherein the first system signals the second system to bypass processing of one of the plurality of accounts if the first system determines an error in the one account* ([0163]: “Even when alternative processing is used, the event continues along the common path once the exception logic is completed.” In [0444]: “This service allows processes to be controlled by a central control and management

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process (C&M). In this case, C&M can start, stop (gracefully or immediately) and monitor processes to verify their current state (running or in error).” (emphasis added) where ‘processes’ refers to at least two system elements or systems. In [0250]: “The Validator 176 validates the UE (Unrated Event) records for correctness and sends the UE records to the Duplicate Event Check process. [...] An event record file is rejected if it contains too many erroneous records (as specified in a parameter). Single erroneous UE records are errored out and written to an Invalid Event Records File. [...] The importance of the error group determines how to handle the record (for example, ignore the incorrectness, recycle the record, or write it to the Invalid Event Records File)” (emphasis added) where ‘write it to the...’ corresponds to *bypass processing*. Also, in [0475]: “Multiple processes can share memory-mapped files. If two processes on the same machine map to the same file, the file will be loaded into memory only once.” (emphasis added) where ‘file’ corresponds to *accounts* and ‘multiple processes’ corresponds to *processes a set of tasks...*.

Claim 33:

Hanagan teaches the following limitation:

- *the second system signals the first system to bypass processing of another of the plurality of accounts if the second system determines an error in the another account* (In [0445]: “Using special workload balancing processes, message queuing provides a straightforward mechanism for load balancing across multiple batch application processes serving the same function.” (emphasis added) and see the rejection of claim 32 above.).

17. Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hanagan, *et al.* (US PgPub 20040133487 A1) in view of Pather, *et al.* (US 7177859 B2) and further in view of Seshadri, *et al.* (US PgPub 20040002988 A1).

Claim 34:

Hanagan teaches the following limitation:

- *a bulk component* ([0357] “batch environment”) *that concurrently processes* ([0357] “automatically processed in parallel”) *a plurality of eligible accounts* ([0411] “row is valid” and

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- in [0078] “providing advanced features to additionally support scripting and validations.” (emphasis added)) *with a set of dependent tasks periodically* ([0329] “Task dependencies”. Hanagan [0415] states “Batch units of workload are initiated periodically, usually according to a pre-defined time schedule or by predictable arrival of an occasional event or file of events from an external system.” (emphasis added).);
- *a removal component* (Abstract: “The components are modular.” and in [0252] “Filters can be set up to filter out records. [...] Filters are defined using the ERP graphical user interface.” (emphasis added) where ‘filter out’ corresponds to *removal* and ‘ERP...’ corresponds to *component*”) *that removes an account from the eligible accounts as an errored account if an error is associated therewith* ([0250] “Single erroneous UE records are errored out and written to an Invalid Event Records File. If some records are rejected due to invalid field contents, the reason is written to an Error File.” (emphasis added) where ‘records’ corresponds to *eligible accounts* and ‘errored out’ corresponds to an *errored account*.);
 - *an error component* ([0149-56] “...in the case an error is detected.” See also [0250] “The Validator”) *that processes the errored account* ([0250] “Single erroneous UE records are errored out and written to an Invalid Event Records File.”) *to resolve the error associated therewith* (see [0250] and [0443] “Error Handling”), *and merges the resolved errored account with bulk processing* ([0250] “A GUI is also provided for error correction. [...] The validated UE records are written to files (different files (same format) for assembly and non-assembly records).” (emphasis added) where ‘validated’ corresponds to *resolved errored account* and ‘assembly’ corresponds to *merges...* see also [0477] “The framework merges master and incremental update files...”) *of the eligible accounts by the bulk component when the resolved errored account is temporally aligned with the bulk processing* ([0476] “Over time the master file will get out of synchronization with the database because of database inserts, updates or deletions that are applied to the database table. For large tables supporting time critical functionality, these additional changes are captured periodically and made available to running processes in an incremental update file.” (emphasis added) where ‘out of

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synchronization' in conjunction with 'changes...' and 'incremental update...' corresponds to *temporally aligned* and 'running processes' corresponds to *the bulk component and bulk processing*); and

Hanagan does not specifically teach the notion of *a catch-up component that facilitates real-time processing of an account, per se*, but Pather in an analogous art pertaining to programming models for subscription services, does. In at least col. 28, lines 59-62 ([28,59-62]) "Additionally, developers may specify the number of quanta that the logical generator clock can fall behind the real time clock before processing of subscription rules (both event and scheduled) is skipped in order to catch up."). Neither Hanagan nor Pather specifically teach that *the bulk component processes the errored account with a predetermined threshold number of attempts to resolve the errored account so that the account state is in par with the rest of accounts being processed by bulk mode*, but Seshadri, in an analogous art does. Seshadri [0099] states: "With respect to the distributor, it should be noted that retry functionality can be provided wherein the platform allows application developers to specify a pattern of retry attempts for failed notifications and retries are implemented accordingly without requiring an application developer to specify an inordinate amount of extra logic." (emphasis added) and in [0338] and [0344] describes a "retry schedule" and in [0345] describes an "element [that] can be used to define the number of failures that may occur before a system event log entry is created to document the failure." (emphasis added) where the emphasized text corresponds to *a predetermined threshold number of attempts to resolve the errored account*. Note that Seshadri also teaches batch processing in at least [0126] and in many other paragraphs. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Hanagan and Pather with Seshadri because the bulk (batch) processing capabilities taught in Seshadri increases the efficiency (Seshadri [0007]) of the account processing system and the technical capability to combine these teaching existed at the time of the invention and the result was predictable.

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Conclusion

The prior art made of record and not relied upon that is considered pertinent to applicant's disclosure are:

- Seshadri, et al. (US PgPub 20040002988 A1)
- Savage, et al. (US 7236950 B2) and pertain to account processing.

Any inquiry of a general nature or relating to the status of this application or concerning this communication or earlier communications from the Examiner should be directed to **Mark A. Fleischer** whose telephone number is **571.270.3925**. The Examiner can normally be reached on Monday-Friday, 9:30am-5:00pm. If attempts to reach the examiner by telephone are unsuccessful, the Examiner's supervisor, **Bradley Bayat** whose telephone number is **571.272.6704** may be contacted.

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Mark A. Fleischer

/Mark A Fleischer/

Examiner, Art Unit 3624

29 September 2008

/Bradley B Bayat/

Supervisory Patent Examiner, Art Unit 3624